WHAT IS CLAIMED IS:

1. A substrate for a liquid crystal display device, comprising:

a transparent substrate including a display region for displaying an image;

a plurality of spacers formed in the display region, the spacers having a gradually increasing compression ratio in a direction from a center of the display region to an edge of the display region.

2. The substrate of claim 1, wherein the substrate comprises a plurality of pixel electrodes, the spacers being formed such that the spacers deviate from the pixel electrodes.

3. The substrate of claim 1, wherein the substrate comprises a black matrix and a common electrode, the spacers being formed such that the spacers are disposed over the black matrix.

4. The substrate of claim 1, wherein the spacers are tapered, a side face of the spacer and the transparent substrate forming a tapered angle, the tapered angle of the spacers gradually increasing in the direction, a product of an upper diameter and a lower diameter of the spacers decreasing in the direction.

5. The substrate of claim 4, wherein a difference of the tapered angle of the spacer disposed at the edge and the tapered angel of the spacer disposed at the center is no more than about 40°.

6. The substrate of claim 1, wherein the spacers are tapered, such that a tapered angle is constant, a side face of the spacer and the transparent substrate forming the tapered angle, a diameter of the spacers decreasing in the direction.

7. The substrate of claim 1, wherein a polymer linking density of the spacers decreases in the direction.

8. The substrate of claim 1, wherein Young's modulus of the spacers decreases in the direction.

9. The substrate of claim 1, wherein an amount of compression of the spacer disposed at the center is smaller than the amount of compression of the spacer disposed at the edge by about $0.1\mu m$.

10. The substrate of claim 1, wherein the spacers are formed, such that a condition $1 < A_{center} / A_{edge} < 1 + 0.1A_{center}$ is satisfied, where A_{center} denotes a cross-sectional area of the spacer disposed at the center and A_{edge} denotes a cross-sectional area of the spacer disposed at the edge.

11. The substrate of claim 1, wherein the spacer disposed at the center has a column shape, the spacers being tapered in said direction.

12. The substrate of claim 11, wherein the column is a cylinder, a rectangular prism or a hexagonal prism.

13. The substrate of claim 12, wherein the column is tapered to form truncated cone shape, a frustum of rectangular pyramid shape, a frustum of hexagonal pyramid shape.

14. A liquid crystal display apparatus comprising:

a first substrate including a display region for displaying an image;

a second substrate facing the first substrate;

a fence disposed between the first substrate and the second substrate, the fence surrounding the display region to form a space defined by the first and second substrates and the fence;

a liquid crystal layer disposed in the space; and

a plurality of spacers disposed in the space, the spacers maintaining the distance between the first and second substrates, the spacers having a gradually increasing compression ratio in a direction from a center of the display region to an edge of the display region.

15. The liquid crystal display apparatus of claim 14, wherein the substrate comprises a plurality of pixel electrodes, the spacers being formed such that the spacers deviate from the pixel electrodes.

16. The liquid crystal display apparatus of claim 14, wherein the substrate comprises a black matrix and a common electrode, the spacers being formed such that the spacers are disposed over the black matrix.

17. The liquid crystal display apparatus of claim 14, wherein the spacers are tapered, a side face of the spacer and the transparent substrate forming a tapered angle, the tapered angle of the spacers gradually increasing in the direction, a product of an upper diameter and a lower diameter of the spacers decreasing in the direction.

18. The liquid crystal display apparatus of claim 17, wherein a difference of the tapered angle of the spacer disposed at the edge and the tapered angel of the spacer disposed at the center is no more than about 40°.

19. The liquid crystal display apparatus of claim 14, wherein the spacers are tapered, such that a tapered angle is constant, a side face of the spacer and the transparent substrate forming the tapered angle, a diameter of the spacers decreasing in said direction.

20. The liquid crystal display apparatus of claim 14, wherein a polymer linking density of the spacers decreases in said direction.

21. The liquid crystal display apparatus of claim 14, wherein Young's modulus of the spacers decreases in said direction.

22. The liquid crystal display apparatus of claim 14, wherein an amount of compression of the spacer disposed at the center is smaller than the amount of compression of the spacer disposed at the edge by about 0.1μm.

23. The liquid crystal display apparatus of claim 14, wherein the spacers are formed, such that a condition $1 < A_{center} / A_{edge} < 1 + 0.1A_{center}$ is satisfied, where A_{center} is a cross-sectional area of the spacer disposed at the center and A_{edge} is a cross-sectional area of the spacer disposed at the edge.

24. The liquid crystal display apparatus of claim 14, wherein the spacer disposed at the center has a column shape, the spacers being tapered in the direction.

25. The liquid crystal display apparatus of claim 24, wherein the column has a cylindrical shape, a rectangular prism shape or a hexagonal prism shape.

26. The liquid crystal display apparatus of claim 25, wherein the column is tapered to form a truncated cone shape, a frustum of rectangular pyramid shape or a frustum of hexagonal pyramid shape.

27. A method of manufacturing a liquid crystal display apparatus comprising:

forming a first substrate including a display region for displaying an image;

forming a second substrate;

forming a plurality of spacers on the display region of the first substrate, the spacers having a gradually increasing compression ratio in a direction from a center of the display region to an edge of the display region;

forming a fence on the first substrate, such that the fence surrounds the display region to form a space defined by the first substrate and the fence;

dropping liquid crystal in the space to fill the space; and

assembling the first and second substrates with each other.

28. The method of claim 27, wherein the spacers are patterned by a photolithography process.

29. The method of claim 28, wherein the photolithography process is executed, such that an amount of light deceasing in said direction.

30. The method of claim 27, wherein the substrate comprises a plurality of pixel electrodes, the spacers being formed such that the spacers deviate from the pixel electrodes.

31. The method of claim 27, wherein the substrate comprises a black matrix and a common electrode, the spacers being formed such that the spacers are disposed over the black matrix.

32. The method of claim 27, wherein the spacers are tapered, a side face of the spacer and the transparent substrate forming a tapered angle, the tapered angle of the spacers gradually

increasing in said direction, a product of an upper diameter and a lower diameter of the spacers decreasing in said direction.

33. The method of claim 32, wherein a difference of the tapered angle of the spacer disposed at the edge and the tapered angel of the spacer disposed at the center is no more than about 40°.

34. The method of claim 27, wherein the spacers are tapered, such that a tapered angle is constant, a side face of the spacer and the transparent substrate forming the tapered angle, a diameter of the spacers decreasing in said direction.

35. The method of claim 27, wherein a polymer linking density of the spacers decreases in said direction.

36. The method of claim 27, wherein Young's modulus of the spacers decreases in said direction.

37. The method of claim 27, wherein an amount of compression of the spacer disposed at the center is smaller than the amount of compression of the spacer disposed at the edge by about $0.1\mu m$.

38. The method of claim 27, wherein the spacers are formed, such that a condition $1 < A_{center} / A_{edge} < 1 + 0.1A_{center}$ is satisfied, where A_{center} denotes a cross-sectional area of the spacer disposed at the center and A_{edge} denotes a cross-sectional area of the spacer disposed at the edge.

39. The method of claim 27, wherein the spacer disposed at the center has a column shape, the spacers being tapered in said direction.

40. The method of claim 39, wherein the column has a cylindrical shape, a rectangular prism shape or a hexagonal prism shape.

41. The method of claim 40, wherein the column is tapered to form truncated cone shape, a frustum of rectangular pyramid shape or a frustum of hexagonal pyramid shape.

42. A method of manufacturing a liquid crystal display apparatus comprising:

forming a first substrate including a display region for displaying an image;

forming a second substrate;

calculating a density and a cross-sectional area of spacers by a comparative liquid crystal display panel;

forming the spacers on the first substrate according to the calculated density and the cross-sectional area;

forming a fence on the first substrate, such that the fence surrounds the display region to form a space defined by the first substrate and the fence;

dropping liquid crystal in the space to fill the space; and

assembling the first and second substrates with each other.

43. The method of claim 42, wherein the substrate comprises a plurality of pixel electrodes, the spacers being formed such that the spacers deviate from the pixel electrodes.

44. The method of claim 42, wherein the substrate comprises a black matrix and a common electrode, the spacers being formed such that the spacers are disposed over the black matrix.

45. The method of claim 42, wherein the density and cross-sectional area of the spacers are calculated via a stiffness factor 'A' expressed by following equation, $A = a \times B \times C$, where 'a' denotes a compensating constant defined by (area of color filter of comparative liquid crystal display panel) / (area of color filter of objective liquid crystal display panel), 'B' denotes the cross-sectional area of the spacer, and 'C' denotes the density of the spacer (or the count of the spacer per color filter).

46. The method of claim 45, wherein an allowable range of the stiffness factor 'A' is determined by:

forming a graph showing a relation between the stiffness factor and a cell gap, and a relation between the stiffness factor and a compression ratio by using the comparative liquid crystal display panel, a size of the comparative liquid crystal display panel being fixed, spacers of the comparative liquid crystal display panel has fixed Young's modulus; and

obtaining the allowable range having a maximum value and a minimum value by the graph.

47. The method of claim 46, wherein the maximum value corresponds to a maximum allowable cell gap, and the minimum value corresponds to a maximum allowable compression ratio.

48. The method of claim 47, wherein the maximum allowable cell gap is obtained by adding a margin to a thickness of the liquid crystal layer.

49. The method of claim 48, wherein the thickness is about 4.65μm, and the margin is about 0.1μm.

50. The method of claim 47, wherein the first and the second substrates are damaged when the spacers are compressed above the maximum allowable compression ratio.

51. The method of claim 50, wherein the maximum allowable compression ratio is about 15%.

52. The method of claim of 46, wherein the comparative liquid crystal display panel corresponds to a 17inch super extended graphics array (SXGA) liquid crystal display panel, the allowable range of the stiffness 'A' factor is expressed by

$$(Ycom / Yob) \times 32\mu m^2 \leq A \leq (Ycom / Yob) \times 76\mu m^2,$$

where the Ycom is Young's modulus of a comparative liquid crystal display panel, Yob is Young's modulus of an objective liquid crystal display panel.